WHAT IS CLAIMED IS:

1. A semiconductor device, comprising:

a substrate;

a well region, formed in the substrate;

a field effect transistor, formed in the well region; and

a diffused region, formed across the well region and the substrate for applying back gate potential to the well region, and forming a PN junction together with its periphery,

wherein the field effect transistor and the PN junction are connected between terminals for absorbing excess current so that an internal circuit connected to the terminals is protected.

2. The semiconductor device as set forth in claim 1, wherein a gate of the field effect transistor comprises:

a gate oxide film formed on a channel;

a protective film formed on the gate oxide film; and

a conductive material formed on the protective film.

3. The semiconductor device as set forth in claim 2, wherein the gate of the field effect transistor is comprised of metal.

4. The semiconductor device as set forth in claim 1, wherein the field effect transistor is a plurality of field effect transistors which are provided in the well region; and

wherein the field effect transistors share a

gate and a drain.

5. The semiconductor device as set forth in claim 1, further comprising an impedance element having larger impedance than the impedance of the field effect transistor and a diode forming the PN junction in a case that the field effect transistor and the diode are turned on,

wherein the impedance element is arranged between the internal circuit and at least one of the field effect transistor and the diode.

6. The semiconductor device as set forth in claim 1, further comprising a second diffused region connected to the diffused region so that the PN junction is formed with the defused region.

7. A semiconductor device, comprising:

an internal circuit, connected to a plurality of terminals;

a protection circuit, connected between the terminals for protecting the internal circuit,

wherein the protection circuit includes:

a first element, having a rising edge of current equivalent to that of a diode as a response to current that flows according to potential difference between the terminals; and

a second element, having a impedance equivalent to that of a transistor after the rise edge of current.